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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/036,274 | 12/24/2001 | Tai-Cheng Yu | | 3533 |

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EXAMINER

LUU, THANH X

ART UNIT PAPER NUMBER

2878

DATE MAILED: 09/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/036,274

Applicant(s)

YU ET AL.

Examiner

Thanh X Luu

Art Unit

2878

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the attenuating element being driven by a drive device in response to signals from the first and second detector must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

3. Claim 12 is objected to because of the following informalities:

In claim 12, line 6, "main" is misspelled. Further, "said input GRIN lens" and "said output GRIN lens" lacks proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 7, Applicant uses the terms "an input optical signals;" it is unclear how many optical signals Applicant intended to claim. Further, Applicant refers to "an attenuating element" with the optical splitter, and then further refers to "an attenuating element" for attenuating. It is unclear if the second instance of "an attenuating element" refers to the same element or a different element.

Claims 2-6 and 8-11 are indefinite by virtue of their dependency on an indefinite claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Inagaki et al. (U.S. Patent 6,603,596).

Regarding claims 1 and 6, Inagaki et al. disclose (see Figure 21) an optical attenuator comprising: an optical splitter (516) for splitting input optical signals from an input fiber into two portions, one portion of the input optical signals being transmitted to

an attenuating element (530) and a second portion being transmitted to a first detector (519); an output port for splitting (531) attenuated optical signals into two portions, one portion of the attenuated optical signals being transmitted to an output fiber and a second portion being transmitted to a second detector (533); and the attenuating element for attenuating the input optical signals being driven by a drive device (534) in response to signals from the first and second detectors; wherein the first detector is positioned to receive the second portion of the input optical signals and the second detector is positioned to receive the second portion of the attenuated optical signals. Inagaki et al. further (see column 11, line 17) disclose the detectors are photodiodes.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2-5 and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inagaki et al. in view of Shen et al. (U.S. Patent 6,130,984) and Qin et al. (U.S. Patent 6,603,906).

Regarding claims 2-4, 7-9, 11 and 12, Inagaki et al. disclose the claimed invention as set forth above. Inagaki et al. do not specifically disclose a ferrule, a GRIN lens as the optical splitter. Shen et al. teach (see Figure 2) an optical attenuator having a ferrule (34) and a GRIN lens (36), a collimator. However, Shen et al. do not teach the splitting. Qin et al. further teach (see Figure 3) a ferrule (21) and a GRIN lens (22) with

a beam splitter coating (23) for splitting optical signals. Thus, Shen et al. recognize that ferrules and GRIN lenses improve coupling between fibers and an optical attenuator. Qin et al. recognize that a compact beamsplitter can be achieved with a coating on a GRIN lens. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a configuration in the apparatus of Inagaki et al. in view of Shen et al. and Qin et al. to obtain a compact and improved optical attenuator for coupling with optical fibers.

Regarding claims 5 and 10, Inagaki et al. in view of Shen et al. and Qin et al. disclose the claimed invention as set forth above. Inagaki et al. in view of Shen et al. and Qin et al. do not specifically disclose an antireflective film on the GRIN lens. However, antireflective films on lenses are notoriously well known in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an antireflective film on the GRIN lens of Inagaki et al. in view of Shen et al. and Qin et al. to reduce interference radiation and improve detection.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (703) 305-0539. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (703) 308-4852. The fax phone number for the organization where the application or proceeding is assigned is (703) 308-7722.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl
August 29, 2003



Thanh X. Luu
Patent Examiner